

REMARKS

Favorable reconsideration is respectfully requested.

The claims are 29-40.

Applicants acknowledge with appreciation the helpful telephone interview with the Examiner on or about July 2, 2003.

No specific agreements were reached in the interview.

A summary of the representations made in said telephone interview are included in the remarks below.

Firstly, a new set of claims is presented.

The claims recite oxidation under acidic conditions with ozone, resulting in the unique structure of the presently recited modified animal fiber, as will be discussed below.

Previous claims 17-22 stand rejected under 35 U.S.C. 102(b) or under 35 U.S.C. 103(a) as obvious over Hojo et al. (U.S. 5,824,113).

Further, claims 23-28 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Hojo et al. as applied above further in view of Thorsen (U.S. 4,189,383).

These rejections are respectfully traversed.

In view of the newly presented claims and Rule 132 Declaration, it will be apparent that the modified animal fiber of the present invention is completely different from that of Hojo et al. (U.S. 5,824,113), both in structure and physical properties.

Especially, the IR absorption for the $-S_2H$ group and IR absorption of $-S-SO_3Na$ group (Bunte salts) are observed as specified in Claim 29, showing that the modified animal fiber of the present invention has $-S-S-$ bonds which are effectively oxidized and cut in the animal fiber surface structure, and that the epicuticle layer is retained without destruction as confirmed by Allwörden reaction (see page 12, line 26 to page 13, line 4 of the present specification).

Such a structure as above-mentioned exhibits the physical properties as specified in the present claims (See, for example, page 15, line 9 to page 16, line 19 of the present specification).

Such a structure as possessed by the present fibers and such physical properties are neither described nor suggested by Hojo.

It should be noted that while Hojo teaches acidic oxidation conditions and various oxidants, it does not disclose or suggest ozone as an oxidant.

Further, while Thorsen mentions ozone, it employs it under neutral conditions (See column 2, line 47).

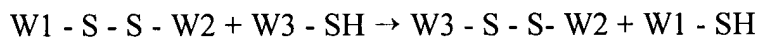
In view of the foregoing, it is apparent that the above-discussed rejections on prior art are untenable and should be withdrawn.

Claims 17-28 have been rejected under 35 U.S.C. 103(a) as obvious over Russell et al. (U.S. 5,928,383).

This rejection is also respectfully traversed.

Russell et al. basically relates to a process to enhance the disulfide interchange reaction for treating fabric, particularly permanently setting fabric. The present invention relates to modified animal fiber, being completely different from Russell et al. in the purpose and the substance.

The disulfide interchange reaction is as follows:



Thus, Russell et al. cuts -S-S- bonds and then binds the cut bond again.

The disulfide interchange reaction is enhanced while the fabric is annealed in the presence of a gas such as H_2S_2 , H_2S_3 etc. (Claim 1, line 36 to line 55 in column 4 of Russell et al.).

In the annealing process, reducing agents are used.

It is disclosed that the oxidation or blocking of excess thiols after annealing may be desirable in column 7, lines 14 to 15 of Russell et al.

Russell et al. carries out a reduction process to enhance the disulfide interchange reaction and then an oxidation process, so that -S-S- bonds are cut and recombined to form again -S-S- bonding. On the contrary, in the present invention, an oxidation process and then a reduction process are carried out. The -S-S- bonds are cut in final product and no thiol component (-SH) is generated.

Thus, it is clear that Russell cannot render the present claims obvious.

Lastly, claims 23-28 have been rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-7 of co-pending application 09/721,772. This rejection will be moot since Applicants will permit Serial No. 09/721,772 to become abandoned.


For the foregoing reasons, it is apparent that the rejections on prior art are untenable and should be withdrawn.

No further issues remaining, allowance of this application is respectfully requested.

If the Examiner has any comments or proposals for expediting prosecution, please contact undersigned at the telephone number below.

Respectfully submitted,

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